FOUR CHANNEL H264 DIGITAL VIDEO RECORDER
ART. 49807

Please read this manual thoroughly before use
and keep it for future reference.

INVENTING Comelit GROUP S.P.A. INNOVATION

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WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED
SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

COMPLIANCE NOTICE OF FCC:

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE, IN WHICH CASE USERS WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT THEIR OWN EXPENSE.

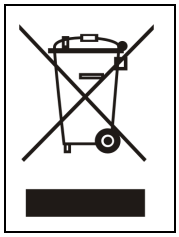
WARNING: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS OF DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

The information in this manual is believed to be accurate as of the date of publication. We are not responsible for any problems resulting from the use thereof. The information contained herein is subject to change without notice. Revisions or new editions to this publication may be issued to incorporate such changes.

WEEE (*Waste Electrical & Electronic Equipment*)

Correct Disposal of This Product
(Applicable in the European Union and other European countries with separate collection systems)



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

Important Safeguards

1. Read Instructions
All the safety and operating instructions should be read before the appliance is operated.

2. Retain Instructions
The safety and operating instructions should be retained for future reference.

3. Cleaning
Unplug this equipment from the wall outlet before cleaning it. Do not use liquid aerosol cleaners. Use a damp soft cloth for cleaning.

4. Attachments
Never add any attachments and/or equipment without the approval of the manufacturer as such additions may result in the risk of fire, electric shock or other personal injury.

5. Water and/or Moisture
Do not use this equipment near water or in contact with water.

6. Ventilation
Place this equipment only in an upright position. This equipment has an open-frame Switching Mode Power Supply (SMPS), which can cause a fire or electric shock if anything is inserted through the ventilation holes on the side of the equipment.

7. Placing and Accessories
Do not place this equipment on an unstable cart, stand or table. The equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment.

This equipment and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.

8. Power Sources
This equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power, please consult your equipment dealer or local power company.

9. Power Cords
Operator or installer must remove power and TNT connections before handling the equipment.

10. Lightning
For added protection for this equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the equipment due to lightning and power-line surges.

11. Overloading
Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.

12. Objects and Liquids
Never push objects of any kind through openings of this equipment as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the equipment.

13. Servicing
Do not attempt to service this equipment yourself. Refer all servicing to qualified service personnel.

14. Damage requiring Service
Unplug this equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:

A. When the power-supply cord or the plug has been damaged.
B. If liquid is spilled, or objects have fallen into the equipment.
C. If the equipment has been exposed to rain or water.
D. If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the equipment to its normal operation.
E. If the equipment has been dropped, or the cabinet damaged.
F. When the equipment exhibits a distinct change in performance — this indicates a need for service.

15. Replacement Parts
When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

16. Safety Check
Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.

17. Field Installation
This installation should be made by a qualified service person and should conform to all local codes.

18. Correct Batteries
Warning: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

19. Tmra
A manufacturer's maximum recommended ambient temperature (Tmra) for the equipment must be specified so that the customer and installer may determine a suitable maximum operating environment for the equipment.

20. Elevated Operating Ambient Temperature
If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (Tmra).

21. Reduced Air Flow
Installation of the equipment in the rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

22. Mechanical Loading
Mounting of the equipment in the rack should be such that a hazardous condition is not caused by uneven mechanical loading.

23. Circuit Overloading
Consideration should be given to connection of the equipment to supply circuit and the effect that overloading of circuits might have on over current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

24. Reliable Earthing (Grounding)
Reliable grounding of rack mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

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Chapter 1 — Introduction

FEATURES

Your color digital video recorder (DVR) provides recording capabilities for 4 camera inputs. It provides exceptional picture quality in both live and playback modes, and offers the following features:

- 4 Composite Input Connectors
- Compatible with Color (NTSC or PAL) and B&W (CCIR and EIA-170) Video Sources
- Auto Detection for NTSC and PAL
- Auto Detection for VGA Monitor
- Dual Codec (MPEG-4 and H.264)
- Recording up to 120 NTSC Images per Second (100 PAL Images per Second)
- Continuous Recording in Disk Recycle Mode
- Recording while Playing Back and Transmitting to Remote Site
- User-friendly Graphical User Interface (GUI) Menu System
- Record Modes: Time-Lapse and Event
- Multiple Search Engines (Date/Time, Calendar, Event)
- Alarm Connections Include: Input, Output and Reset Input
- Built-in Buzzer
- Live or Recorded Video Access via Ethernet
- Self-diagnostics with automatic notification including hard disk drive S.M.A.R.T. protocol

PACKAGE CONTENTS

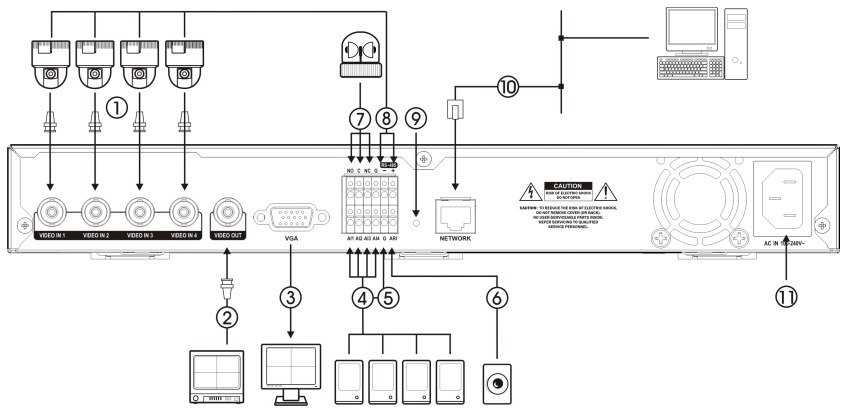
The package contains the following:

- Digital Video Recorder
- Power Cord
- User's Manual (This document)
- RAS Software CD and User's Manual

WARNING: ROUTE POWER CORDS SO THAT THEY ARE NOT A TRIPPING HAZARD. MAKE CERTAIN THE POWER CORD WILL NOT BE PINCHED OR ABRADED BY FURNITURE. DO NOT INSTALL POWER CORDS UNDER RUGS OR CARPET. THE POWER CORD HAS A GROUNDING PIN. IF YOUR POWER OUTLET DOES NOT HAVE A GROUNDING PIN RECEPTACLE, DO NOT MODIFY THE PLUG. DO NOT OVERLOAD THE CIRCUIT BY PLUGGING TOO MANY DEVICES IN TO ONE CIRCUIT.

REAR PANEL CONNECTORS

No special tools are required to install the DVR. Refer to the installation manuals for the other items that make up part of your system. Your DVR should be completely installed before proceeding.



① Video In: Connect the coaxial cables from the video sources.

② Video Out: Connect a main monitor.

③ VGA: Connect a VGA monitor. The VGA monitor is automatically detected when you connect it.

④ Alarm In: Connect alarm-in devices. You can use external devices to signal the DVR to react to events. Mechanical or electrical switches can be wired to the AI (Alarm-In) and G (Ground) connectors. The voltage range is from 0V to 3.3V. When the electrical switch is wired, the threshold voltage for NC (Normally Closed) is above 2.4V and for NO (Normally Open) is below 0.3V, and it should be stable at least 0.5 seconds to be detected.

⑤ G (GND): Connect the ground side of the alarm input to the G connector.

⑥ ARI: Connect an alarm reset device to reset both the Alarm Out signal and the DVR's internal buzzer. Mechanical or electrical switches can be wired to the ARI (Alarm Reset In) and G (Ground) connectors. The threshold voltage is below 0.3V and should be stable at least 0.5 seconds to be detected.

⑦ Alarm Out: Connect an alarm-out device to NC (Normally Closed) and C (Common) connectors or NO (Normally Open) and C (Common) connectors. Permitted current is up to 2A for 125VAC, 1A for 30VDC.

⑧ RS-485 Port: Connect a PTZ camera. Refer to *Appendix – Connector Pin Outs* for details.

⑨ Factory Reset Switch: Use this switch on rare occasions that you want to return all the settings to the original factory settings. Refer to the *Factory Reset* section for details.

⑩ Network: Connect a Cat5 cable with an RJ-45 jack. The DVR can be networked with a computer for remote connection.

⑪ Power Cord: Connect the power cord to the DVR and then to the wall outlet.

NOTES:

- The DVR does not support simultaneous operation of the main monitor and VGA monitor.
- It is possible that the DVR will not detect a VGA monitor automatically if the connected VGA monitor does not support the auto detection function. In this case, press and hold the DISPLAY button on the front panel for 5 seconds or longer to switch the video output to VGA out. Pressing and holding the button for 5 seconds or longer again returns to the previous video output mode.
- To make connections on the Alarm Connector Strip, press and hold the button and insert the wire in the hole below the button. After releasing the button, tug gently on the wire to make certain it is connected. To disconnect a wire, press and hold the button above the wire and pull out the wire.
- All the connectors marked *G* (GND) are common.
- This Network Port is not connected with cables or wires intended to connect to the outdoor directly.

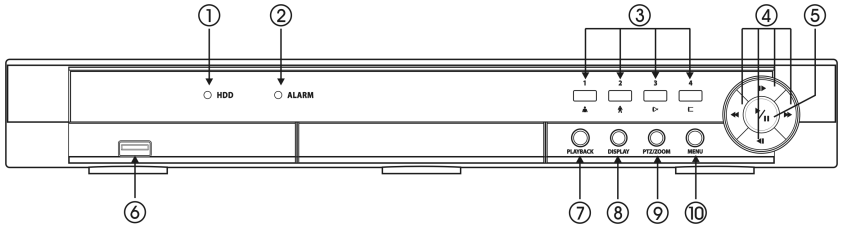
FACTORY RESET

To reset the unit, you will need a straightened paperclip:

Turn the DVR off. → Poke the straightened paperclip in the unlabeled hole to the right of the Alarm Output connector, and turn the DVR on. → Hold the switch until the DVR turns on and live monitoring screen appears. → Release the reset switch. All of the DVR's settings are now at the original settings it had when it left the factory.

CAUTION: When using the Factory Reset, you will lose any settings you have made.

FRONT PANEL CONTROLS



① HDD LED: The LED flickers when the DVR is recording or searching video on the hard disk drive.

② ALARM LED: The LED is lit when alarm output or internal buzzer is activated.

③ Camera Buttons (1 – 4): Pressing the button displays the selected camera in full screen. In PTZ mode, pressing the 1 or 2 button zooms in or out, and the 3 or 4 button focuses near or far.

④ Arrow Buttons: Pressing the button controls playback of recorded video in playback or searching mode. Pressing the button moves to another item or changes a selected number value in Main Setup menu. Pressing the button pans or tilts a PTZ camera in PTZ mode.

⑤ Play/Pause Button (⏯): Pressing the buttons freezes the current screen in the live monitoring mode. In the playback or search mode, pressing the button plays back images at regular speed or pauses playing video. In the Main Setup menu, pressing the button selects an item or completes the entry you have made. The blue LED surrounding the button is lit while the unit is turned on.

⑥ USB Port: Connecting the USB device allows you to upgrade the software, to copy video clips and to import or export DVR settings.

⑦ PLAYBACK Button: Pressing the button in the live monitoring mode enters the playback mode and pressing the button again exits the playback mode. It also loads the PTZ preset in the PTZ mode. In the playback mode, pressing and holding the button for two seconds or longer starts copying video clips. *Chapter 2 – Operation* → *Searching*, *Clip Copy* for details.

⑧ DISPLAY Button: Pressing the button toggles screen mode between quad and sequence. When the DVR does not detect a VGA monitor automatically, pressing and holding the button for 5 seconds or longer will toggle the video output between Video Out and VGA out. During clip copy, you cannot switch the video output mode.

⑨ PTZ/ZOOM Button: Pressing the button toggles PTZ mode and zoom mode. In the live monitoring mode, pressing the button enters PTZ mode. In the PTZ mode, pressing the button enters zoom mode. Pressing the button again exits the zoom mode.

⑩ MENU Button: Pressing the button launches or closes the Main Setup menu in the live monitoring or recording mode, Search Menu in playback or searching mode, or PTZ menu in PTZ mode.

Chapter 2 — Operation

TURNING ON THE POWER

Connecting the power cord to the DVR turns on the unit. The unit will take approximately 30 seconds to initialize.

The DVR provides five operation modes: live monitoring, recording, playback, searching and PTZ mode. When the DVR operates first, it displays quad screen and starts recording.

The description of OSD icons is as follows:

CAM1	Camera title
PTZ	PTZ mode
	Zoom mode
	Network connected
	Freeze mode
	Sequence mode
	HDD Recycle mode
%	Remaining storage space
	Schedule recording off
	Being clip copied
	Recording mode (: Time-lapse, : Event, : Time-lapse & Event)
	Playback mode

How to change the password…

There is no default password and you can designate a password. You will be asked the password when entering Main Setup menu. Refer to *Chapter 3 – Configuration → Main Menu, SYSTEM* for changing password.

How to change the system date/time…

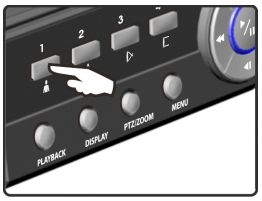
You can change the system date/time. Refer to *Chapter 3 – Configuration → Main Menu, SYSTEM* for changing the system date/time.

LIVE MONITORING

To Change Screen Mode

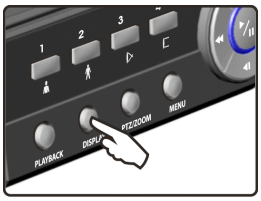
- Full-screen

  Pressing a camera button in quad screen mode displays that camera in full screen.



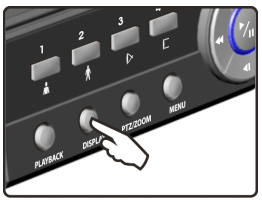
- Quad screen

  Pressing the DISPLAY button in full screen mode displays four cameras at once.



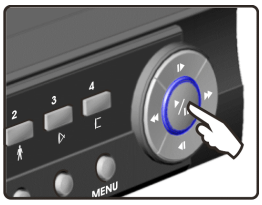
- Sequence screen

  Pressing the DISPLAY button in quad screen mode displays four cameras in sequence. Pressing the DISPLAY button again in sequence screen mode returns to the quad screen mode.



- Freeze screen

  Pressing the ⏯ (Play/Pause) button freezes the current screen. Pressing the button again releases the freeze screen mode.



RECORDING

When you turn the DVR on, it starts recording according to the default recording schedule. You can configure recording schedule. When the DVR is in the time-lapse recording mode, it records video during the scheduled time. When the DVR is in the event recording mode, it records video when an event occurs within the scheduled time. Refer to *Chapter 3 – Configuration → Main Menu, RECORD* for details.

To Enter Recording Mode

- Time-Lapse Recording
  ① Main Menu →RECORD
  - Select or in Record Mode.
  - Set up the recording speed and quality for time-lapse recording.
  - Set up the recording schedule.
- Event Recording
  ① Main Menu → RECORD
  - Select or in Record Mode.
  - Set up the recording speed and quality for event recording.
  - Set up the recording schedule.

  ② Main Menu → EVENT
  - Set up motion or alarm-in events.

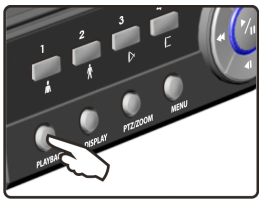
PLAYBACK

Once video has been recorded, you can view it. When playing video for the first time, the DVR will display the most recent image. When playing video subsequent times, the DVR will start playing video from the last recalled image.

NOTE: While recording video, the playback speed of searched data might decrease.

To Enter Playback Mode

Pressing the PLAYBACK button in the live monitoring mode enters the playback mode and plays recorded video.



Playback buttons on the front panel perform the following functions as described below:

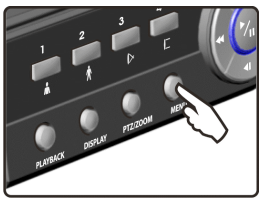
- Go to the next image
- Forward Play (toggles the playback speed from ▶▶, ▶▶▶ and ▶▶▶▶)
- Go to the previous image
- Backward Play (toggles the playback speed from ◀◀, ◀◀◀ and ◀◀◀◀)
- Play/Pause

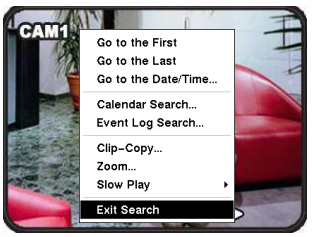
SEARCHING

The DVR provides various search engines: Date/Time, Calendar and Event, and also supports clip copying a video segment.

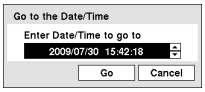
To Enter Searching Mode

Pressing the MENU button in the playback mode enters the Search mode and displays the Search Menu. Selecting Exit Search exits the search mode. Select the desired search mode in the search menu.



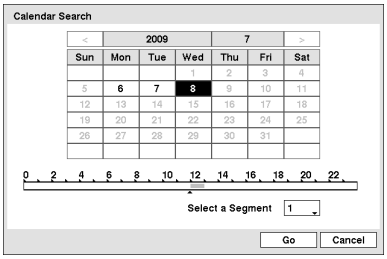


- Go To the First: Select to go to the first recorded image.
- Go To the Last: Select to go the last recorded image.
- Slow Play: Select to play video at low speed (x1/2, x1/3, x1/4, x1/6, and x1/8)
- Date/Time Search



Changing the desired date and time to search for and clicking the Go button displays the recorded image of that date and time. Pressing the ⏯ (Play/Pause) button plays the recorded video.

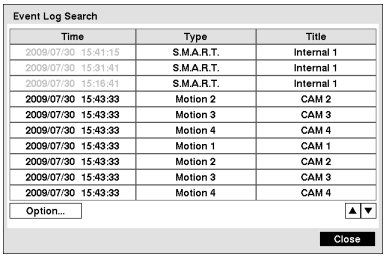
- Calendar Search

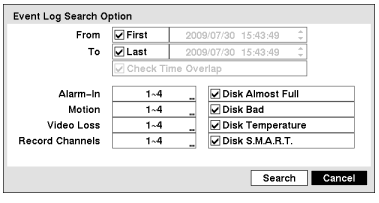


Days with recorded video on the calendar and hours in which video was recorded on the timetable will be highlighted. Selecting the desired date or time and clicking the GO button display the recorded image of that date or time. Pressing the ⏯ button plays the recorded video.

If the DVR's time and date have been reset to a time that is earlier than some recorded video, it is possible for the DVR to have more than one video stream in the same time range. In this case, select the video stream you want to search in the Select a Segment option. Refer to *Appendix – Time Overlap* for further information on searching time-overlapped video streams.

- Event Search





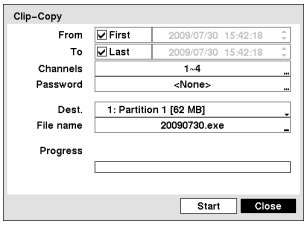
Selecting the event log to search for displays the recorded image of that event. Pressing the ⏯ button plays the recorded video. Refer to *Chapter 3 – Configuration → Main Menu, RECORD* for further information on setting event recording.

Selecting Option… allows you to specify the event search condition.

– From/To: Set up to designate a specific period of video to search. Select Check Time Overlap and select one of the overlapping start and stop time if the DVR's date and time have been reset and the DVR has more than one overlapping start and stop time. Selecting First or Last searches video from the first or to the last recorded images.
– Alarm-In, Motion or Video Loss: Select channels to include specific event types in your search condition.

– Record Channels: Select channels o include every recorded event regardless of the event type in your search condition.
– Disk Almost Full, Disk Bad, Disk Temperature or Disk S.M.A.R.T.: Select to include self-diagnostic events in your search condition.

• Clip Copy



It allows you to copy recorded video clips to external storages. The copied video clips can be viewed on computers. Refer to *Appendix – Clip Player*.

– From/To: Set up to define a specific period of video to copy. You can simply sets the period of video to copy by using the PLAYBACK button on the front panel in the playback mode. Pressing and holding the PLAYBACK button for two seconds or longer sets the starting point. Pressing and holding the PLAYBACK button for two seconds of longer again sets the ending point. Selecting First or Last copies video from the first or to the last recorded image.
– Channels: Choose to select a camera of the video to copy.
– Password: Choose to assign a password to use when playing the copied video clips.
– Dest.: Choose to select a storage device for clip copy.
– File Name: The DVR automatically assigns a file name to the video clip, but you can assign a desired file name.

NOTES:

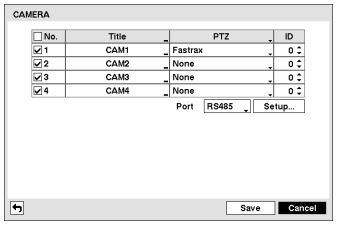
- The time bar on the calendar during Calendar search is one-hour segments. If a segment is highlighted, it means that some video was recorded during that hour. However, it does NOT mean video was recorded for the entire hour.
- The lower number of the Segment during Calendar search indicates the latest recorded video.
- It is possible that no recorded image displays on the current screen. Press the DISPLAY button and change the screen mode 2x2. You will be able to easily see the camera have recorded video during target time.
- The USB device for clip copy must be FAT16 or FAT32 format.
- When naming a file of video clip to copy, you cannot use the following characters: \, /, :, *, ?, ", <, >, |. The DVR will automatically add the date and ".exe" to the file name.
- The file size for clip copy is limited to 2GB.
- During Clip Copy, you cannot shut the system down or clear data on the storage device. Refer to *Chapter 3 – Configuration → Main Menu*, *STORAGE* for clearing data on the storage device.
- Do NOT disconnect the USB cable or the power from the external drive while copying video clips. If the external drive is shut down or the USB cable is disconnected while copying video clips, THE DVR SYSTEM MAY NOT WORK NORMALLY OR THE EXTERNAL DRIVE COULD BE DAMAGED, and you will get an error message the next time you try to copy video clips. You will need to power down the DVR and restart it to get rid of the error message. Once the file system of the USB hard disk drive has been corrupted, this error message cannot be dismissed. Even after restarting the DVR it may automatically restart while preparing to clip copy. You must recover the file system using the recovery program, or you must reformat the hard disk drive.

PTZ CONTROL

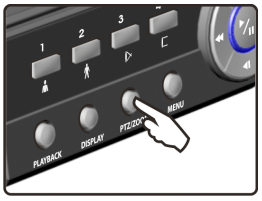
PTZ control is available for only PTZ cameras that allow pan, tilt, zoom, focus or preset etc.

To Enter PTZ Mode

① Connect a PTZ device to the DVR and set up the PTZ device. Refer to *Chapter 3 – Configuration* → *Main Menu*, *Camera* for details. When the PTZ device is set up, the PTZ icon appears on the screen.



② Pressing the PTZ/ZOOM button in the live monitoring mode and selecting a PTZ camera enters PTZ mode. The PTZ icon flickers in the PTZ mode.



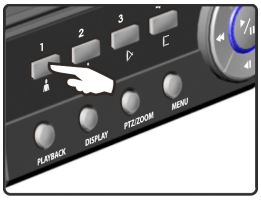
To Control PTZ Cameras

- Pan and tilt

  Pressing the arrow buttons pans or tilts the selected camera.

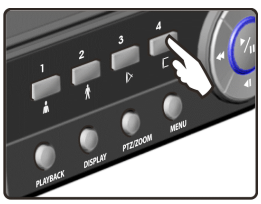
- Zoom

  Pressing the camera button 1 zooms in and pressing the camera button 2 zooms out.



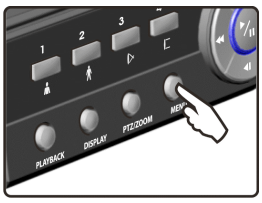
- Focus

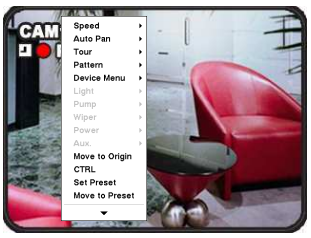
  Pressing the camera button 3 focuses near and pressing the camera button 4 focuses far.



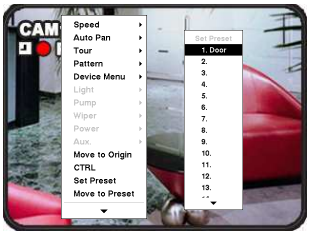
To Run Preset

① Pressing the MENU button in PTZ mode displays the PTZ menu.

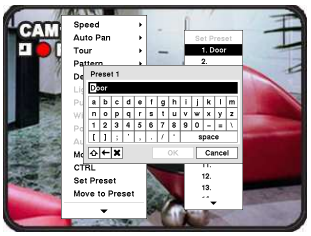




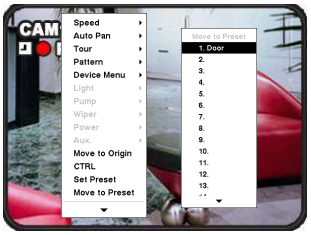
② Move to Set Preset in the PTZ menu and select it by pressing the ⏯ (Play/Pause) button. Pressing the ▶▶ button displays the Set Preset screen.



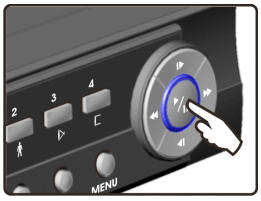
③ Pressing the ⏯ button again displays a virtual keyboard. Enter the preset name by pressing the arrow buttons and ⏯ button, and then press the OK button.



④ Move to Move to Preset in the PTZ menu and select it by pressing the ⏯ button. Pressing the ▶▶ button displays the Move to Preset screen. Pressing the PLAYBACK button while in the PTZ mode directly moves to the Move to Preset screen.



⑤ Selecting the desired preset name by pressing the ⏯ button moves to the selected preset number view.

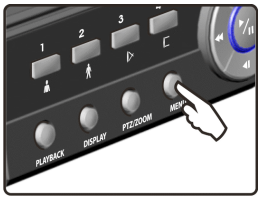


NOTE: Depending on the camera specifications, some features on the PTZ menu may not be supported. Refer to the camera manufacturer's instructions for the proper settings.

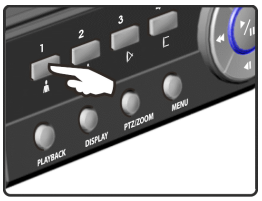
Chapter 3 — Configuration

OVERVIEW

How to Enter Main Setup Menu

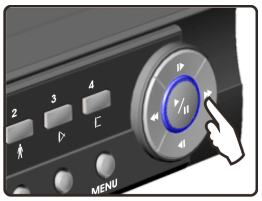


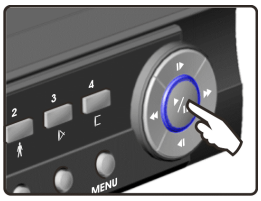
① Pressing the MENU button in the live monitoring mode enters a Main Setup menu. Entering a Main Setup menu is password protected.



② Enter the password by pressing the camera buttons or virtual keyboard (1 to 9), and a Main Setup screen appears. There is no default password.

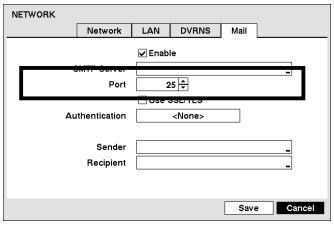
How to Select Items

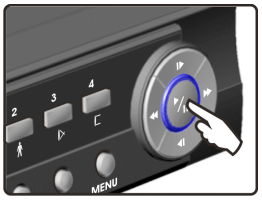




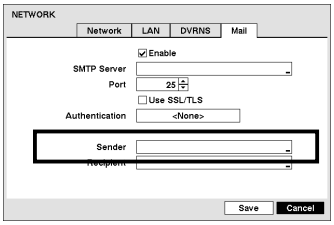
Move to the desired item by pressing the arrow buttons (▮▶, ▶▶, ◀▮ and ◀◀). Pressing the ⏯ (Play/Pause) button selects the item.

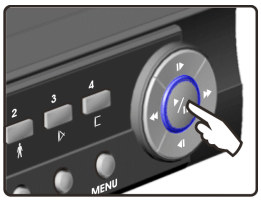
How to Change Values



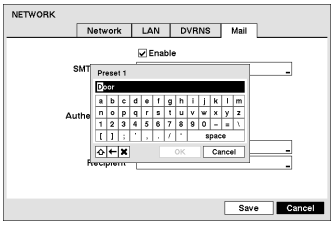


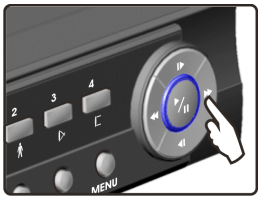
Select the desired item and press the arrow buttons (▮▶ and ◀▮) to increase or decrease the value. Pressing the ⏯ button completes the entry.





① Select the desired item and press the ⏲ button, and a virtual keyboard is displayed.





② Move to the desired character by pressing the arrow buttons, and enter the desired character by pressing the ⏲ button and using space, ⇧ (upper or lower case change), ← (backspace) or ✖ (delete). Pressing the OK button saves the characters you entered.

MAIN MENU

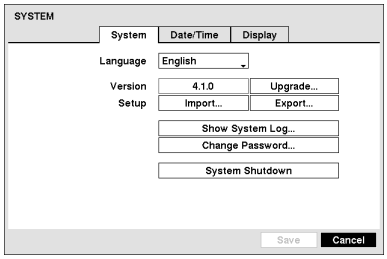
Your DVR can be set up using various screens and dialog boxes.

- SYSTEM: Select to change the language, OSD display option, password and system date/time, to display the system version and system log, to upgrade the software, to save the DVR settings, or to shut down the system.
- RECORD: Select to set up recording quality, mode and schedule.
- EVENT: Select to set up the event detection.
- NETWORK: Select to set up network settings.
- CAMERA: Select to set up camera settings.
- STORAGE: Select to check the storage status.

NOTES:

- When the installed hard disk drive is not formatted, a message box appears asking you to format the hard disk drive. If you want to record video, you need to format the hard disk drive.
- You will see ↩ button throughout the screens. Select the button to reset that screen to its default settings.

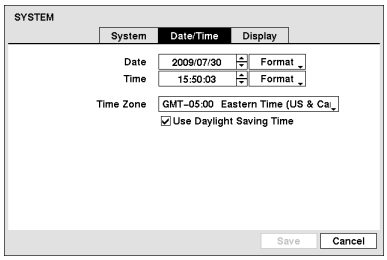
SYSTEM



- Language: Choose the desired language.
- Version: Displays the software version of the DVR. To upgrade the software, connect the USB device containing the upgrade package file (.rui) to the USB port on the front panel and select Upgrade… button. When the Upgrade screen appears, choose the desired upgrade file. The system restarts automatically after completing the upgrade.
- Setup: Choose to import saved DVR settings or export the current DVR settings.
  - Import…: To import saved DVR settings, connect the USB device containing the setup file to the USB port on the front panel and select the desired setup file. Selecting Include Network Setup changes the network settings.
  - Export…: To save the current DVR settings in .dat file format, connect the USB device to the USB port on the front panel and name the settings.
- Show System Log…: Choose to display the system logs (up to 5,000 from the latest). The icon will be displayed in the last column for system activities of the remote site. Refer to *Appendix – System Log* for the details of system log information.
- Change Password…: Choose to change the password.
- System Shutdown: Choose to shut the system down.

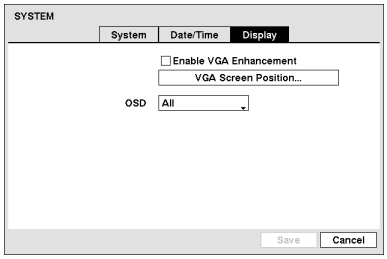
NOTE: Even after changing the DVR settings by importing saved settings, the time-related settings (Date/ Time, Time Zone and Daylight Saving Time) will NOT be changed.

CAUTION: The USB device must be FAT16 or FAT32 format.



- Date: Choose to set the date of the system. Select Format button to change the date format.
- Time: Choose to set the time of the system. Select Format button to change the time format.
- Time Zone: Choose the time zone. Select Use Daylight Saving Time to apply the daylight saving time.

NOTE: The clock will not start running until you have selected the *Save* button.

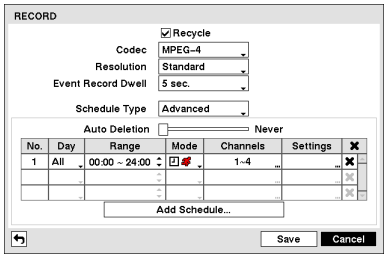


- Enable VGA Enhancement: Choose to enable the VGA enhancement function. When enabling the VGA function, the DVR provides clearer live video by reducing visual defects called interlace artifacts.
- VGA Screen Position: Choose to adjust the screen position on the VGA monitor. When the VGA screen position adjustment screen appears, move the VGA screen position in the direction you want using the arrow buttons. Selecting the default button at the center cancels the screen positioning operation and reloads the default position.

- OSD: Choose to enable or disable OSD (On Screen Display).
  - None: Choose to not display OSD information.
  - Camera: Choose to display camera title, recording status and PTZ icons on each camera screen.
  - Status: Choose to display zoom, network connection, freeze, sequence and recycle icons, and date/time information on the bottom of the screen.
  - All: Choose to display both Camera and Status information.

NOTE: When enabling the VGA Enhancement function, the recording speed will decrease by half.

RECORD



- Recycle: Select to record over the oldest video data once all available storage space has been used. When it is not selected, the DVR stops recording once all available storage has been used.
- Codec: Choose to select a codec between MPEG-4 and H.264. Selecting the new codec displays a message asking you to confirm whether or not you want to restart the system because the system must be restarted before applying the new codec and you will lose all recording data.
- Resolution: Choose to set up the recording resolution.
- Event Record Dwell: Choose to set up the length of time to record for the associated event. Refer to *Event* in this chapter for information regarding event recording.
- Schedule Type – None: Choose to not record.
- Schedule Type – Basic: Choose to set up recording settings for all camera channels at a time.
  - Time Record ips/Quality: Choose to set up the recording speed/quality for time-lapse recording.
  - Event Record ips/Quality: Choose to set up the recording speed/quality for event recording.
  - Record Mode: Choose to set up the recording mode. (: Time-lapse recording, : Event recording, : Time-lapse & Event recording)
  - Time Schedule: Choose to set up the recording schedule for time-lapse and event recording.
- Schedule Type – Advanced: Choose to set up recording settings for each camera channels.
  - Auto Deletion: Adjust the length of time recorded data will be kept by using the bar. Selecting Never will disable the Auto Deletion function. You can set the DVR to automatically delete video recorded earlier than the user-defined period under three conditions: at midnight, whenever the system reboots or whenever the user changes the Auto Deletion settings.
  - No.: Indicates a schedule number. The higher the number is, the higher priority it has.
  - Day: Choose the days that the recording will take place.
  - Range: Set up the time range that the recording will take place.
  - Mode: Choose the recording mode. (: Time-lapse recording, : Event recording, : Time-lapse & Event recording)
  - Channels: Choose which cameras will be recorded.
  - Settings: Define the recording speed (ips: image per second) and quality for time-lapse and event recording independently.
  - : Choose to delete the recording settings.
  - Add Schedule… – Choose to add a schedule. Up to 20 schedules can be registered.

CAUTION: When changing the codec all recording data is deleted before applying the new codec. If you don't want to delete the recording data, back up it using the clip-copy function.

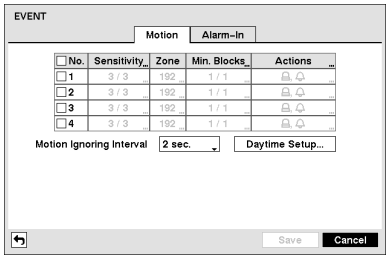
NOTE: When set to the H.264 codec, the DVR can record more images by compressing more effectively than using the MPEG-4 codec. However, the recording speed might decrease depending on the display option and DVR's operation mode**.**

- Selecting the *H.264* codec and enabling the *VGA Enhancement* function will cause the recording speed to be decreased by half. Refer to the *System* section in this chapter for setting up the VGA Enhancement function.
- The maximum recording and playback speed when using the H.264 codec is as follows.

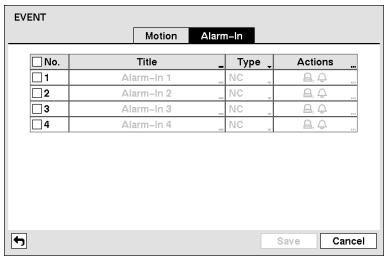
When the DVR is in the Recording Mode only	
Disable VGA Enhancement	Enable VGA Enhancement
120 ips (100 ips PAL)	60 ips (50 ips PAL)

When the DVR is in the Recording mode and Playback mode at the same time	
Recording Speed	Playback Speed
60 ips (50 ips PAL)	120 ips (100 ips PAL)

EVENT

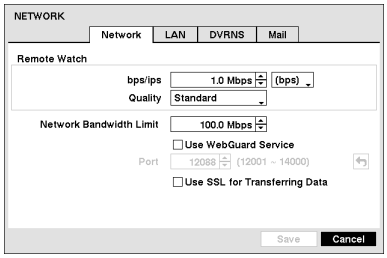


- No.: Select to set the video motion detection for entire cameras (No.) or an individual camera.
- Sensitivity: Adjust the DVR's sensitivity to motion for Daytime and Nighttime independently. Smaller numbers provides lesser sensitivity. (1: the least sensitive, 5: the most sensitive)
- Zone: Define the area of the image where you want to detect motion; e.g., a doorway, and the Motion Detection Zone screen is laid over the video for the selected camera. You can set up motion detection zones by selecting or clearing blocks. You can select or clear four individual blocks in a group at a time, and individual blocks within the group are selected or cleared by using the camera buttons. Pressing the ⏯ (Play/Pause) button displays the menu screen, and each item in the menu has the following functions;
  - Select/Select All: Select to activate highlighted blocks/all blocks to detect motion.
  - Clear/Clear All: Select to deactivate highlighted blocks/all blocks not to detect motion.
  - Reverse/Reverse All: Select to activate inactive highlighted blocks/all inactive blocks and to deactivate active highlighted blocks/all active blocks.
  - OK/Cancel: Select to accept changes and closes Zone setup/Exits Zone setup without saving changes.
- Min. Blocks: Adjust the minimum number of detection blocks that must be activated to trigger a motion alarm. Adjust the minimum number of detection blocks for Daytime and Nighttime independently.
- Actions: Choose to set up actions when a motion is detected in a camera channel. The DVR can notify you when a motion is detected in a camera channel by sounding an alarm or beep or by sending an e-mail.
  - Alarm-Out: Select to associate the motion detected in the camera with alarm-out signals.
  - Notify: Select to send an e-mail to the address set during *NETWORK – Mail* setup.
- Motion Ignoring Interval: Adjust the motion ignoring dwell time. You can control excessive event logging and remote notification of motions detected after the motion dwell time by adjusting the motion ignoring dwell intervals. The DVR will not log and notify motion events occurred during the preset interval range. The recording for motion events will not be affected by the Motion Ignoring function.
- Daytime Setup…: Set up the daytime range. The DVR will consider the remaining time range as the nighttime.



- No.: Select to set the alarm-in detection for entire alarm-in devices (No.) or an individual device.
- Title: Choose to change the name of all or each alarm-in device.
- Type: Set up each input as NO (Normally open) or NC (Normally closed).
- Actions: Choose to set up actions when the DVR senses an input on the alarm input connectors. The DVR can notify you when it senses an input on the alarm input connectors by sounding an alarm or beep or by sending an e-mail.
  - Alarm-Out: Select to associate the input detected in the alarm-in connectors with alarm-out signals.
  - Notify: Select to send an e-mail to the address set during *NETWORK – Mail* setup.

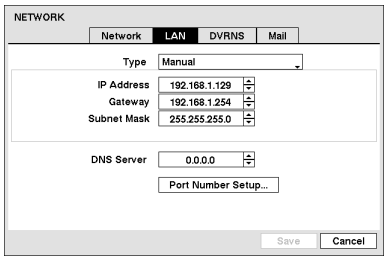
NETWORK



- Remote Watch: Set up the transfer speed and quality.
  - bps/ips: Set up the transfer speed, and choose the unit of measure for the transfer speed between: bps (byte per second) and ips (image per second).
  - Quality: Choose the quality for transferred image.
- Network Bandwidth Limit: Set up the desired maximum bandwidth. When limiting the network bandwidth, the frame rate might decrease to lower than the frame rate set in the RECORD setup screen.
- Use WebGuard Service: Select to use the WebGuard service. See *Appendix – WebGuard* for details.
- Port: Set up the port number for WebGuard program access.
- Use SSL for Transferring Data: Select to use the SSL (Secure Socket Layer) function. You can enhance the security of data except video transmitted to the PC running remote software program by using the SSL protocol. When using the SSL function, the DVR cannot be connected with a remote program or a network keyboard which does not support the SSL function.

NOTES:

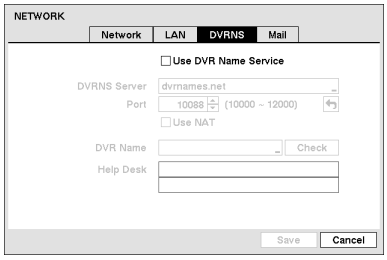
- The higher Quality settings require higher Transfer Speed settings. The transfer speed you set is the maximum speed. Depending on the network environment, this speed may not be achieved.
- The local recording speed might be affected by various network bandwidth (Transfer Speed) conditions.
- The Remote connection will be disconnected temporarily after changing the SSL settings.
- This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (*http://www.openssl.org/*)



- Type: Choose the type of network configuration from: Manual, DHCP and ADSL (with PPPoE).
  - Manual: Select when using a static IP address for network connection and set up LAN parameters manually. Adjust the numbers of the IP Address, Gateway and Subnet Mask.
  - DHCP: Select when the DVR is networked through DHCP (Dynamic Host Configuration Protocol). The DVR reads the IP address from DHCP network when selecting the Save button.
  - ADSL: Select when the DVR is networked through ADSL. Enter the ID and password for ADSL connection, and the DVR receives the IP address when selecting the Save button.
- DNS Server: Set up the IP address of the DNS server. If you set up the DNS Server, the domain name instead of the IP address of the DVRNS or SMTP server can be used during settings of the DVRNS or SMTP server address.
- Port Number Setup…: Choose to set up port numbers.

NOTES:

- Ask your network provider for your network connection type and connection information.
- If the DVR is configured for DHCP or ADSL network, the IP address of the DVR might change whenever the unit is turned on. If you want to use DVRNS function, you will need to get the IP Address of the DNS Server from the internet service provider.
- Do NOT use the same port number for two different programs, otherwise, the DVR cannot be connected with the PC running remote software program.
- The system restarts automatically after changing the port settings. When changing the port settings, you must change the port settings on the PC running remote software programs as well.

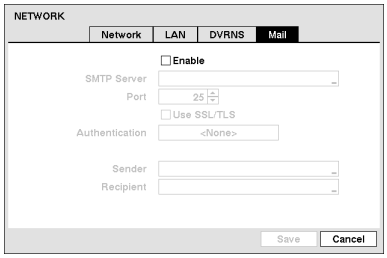


- Use DVR Name Service: Select to use DVR name service function.
- DVRNS Server: Enter the IP address or domain name of the DVRNS server.
- Port: Set up the port number of the DVRNS server.
- Use NAT: Select when using NAT.
- DVR Name: Enter the DVR name to be registered on the DVRNS server. Check if the name is available by selecting the Check button.
- Help Desk: Choosing the Save button registers the DVR on the DVRNS server. Proper DVRNS settings will display the help desk information of the DVRNS server.

NOTE: The DVRNS (DVR Name Service) allows you to connect to the DVR with the dynamic IP addresses or the domain name for remote connection. When using this feature, you can access your DVR remotely by using the DVR name instead of IP address. For the DVRNS feature, the DVR should be registered on the DVRNS server, and the DVRNS server settings on your DVR should match the settings on the registered DVRNS server. Any changes on the DVRNS server might cause improper operation.

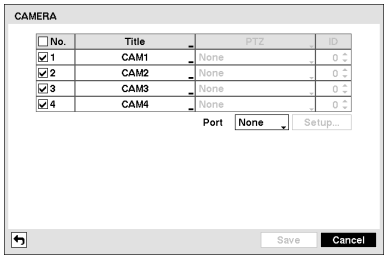
NOTES:

- You will need to get the IP address or domain name of the DVRNS server from your network administrator. When using the NAT (Network Address Translation) device, refer to the NAT manufacturer's instructions for the proper network settings using NAT.
- The DVR name you entered should be checked by selecting the *Check* button, otherwise the DVRNS changes will not be saved. When entering no name or a name already registered on the DVRNS server, an error message displays.



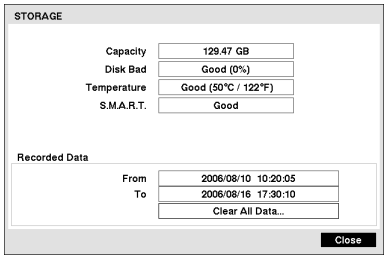
- Enable: Select to set up the DVR to send an e-mail.
- SMTP Server: Set up the SMTP server IP address or domain name obtained from your system administrator.
- Port: Set up the SMTP server port number obtained from your system administrator.
- Use SSL/TLS: Select to send an e-mail via an SMTP server requiring SSL (Secure Sockets Layer) authentication.
- Authentication: Choose if the SMTP server needs authentication, and select Use in the Authentication box to enter user ID and password.
- Sender/Recipient: Choose to enter the sender's/recipient's e-mail address. The e-mail address must include the "@" character to be a valid address.

CAMERA



- No.: Select to turn the camera On.
- Title: Choose to change the name of all or each camera.
- PTZ: Choose to select the model of installed PTZ device.
- ID: Choose to assign an ID to each PTZ device.
- Port: Choose to select the communication port. If the PTZ port is not set up, you will not be able to set up PTZ devices.
- Setup…: Choose to set up port speed, data bit, stop bit and parity of the connected device. Refer to the PTZ device manufacturer's instructions for the proper settings.

STORAGE



- Capacity: Displays the capacity of the storage device.
- Disk Bad: Displays the damage status of the storage device.
  - Not Formatted: The device is not formatted.
  - Good: The device is working properly though some portion (%) of the storage is damaged.
  - Bad: More than 90% of the storage is damaged.
- Temperature: Displays the temperature of the storage device.
  - N/A: The DVR cannot read the temperature.
  - Good: The temperature is normal.
  - Bad: The temperature is 70°C (158°F) or higher.

- S.M.A.R.T.: Displays S.M.A.R.T. information of the storage.
  - Good: The storage condition is normal.
  - Bad: Data cannot be written on or read from the storage device.
  - N/A: The S.M.A.R.T. monitoring is not working or supported.
- Recorded Data: Displays the time information about recorded data of the device. Selecting Clear All Data… will clear all video data except the system log. When the hard disk drive has not been formatted, the Clear All Data… button changes to the Format… button to format the hard disk drive.

NOTE: When the S.M.A.R.T. displays *Bad*, the screen displays a message box. Once the message box appears, replacing the hard disk drive is recommended, usually within 24 hours.

Appendix

WEBGUARD

WebGuard allows you to access a remote DVR, monitor live video images and search recorded video using Internet Explorer web browser anytime from virtually anywhere.

Computer system requirements for using WebGuard are:

- Operating System: Microsoft Windows® 2000, Microsoft Windows® XP or Microsoft Windows® Vista
- CPU: Intel Pentium III (Celeron) 600MHz or faster
- RAM: 128MB or higher
- VGA: 8MB or higher (1024x768, 24bpp or higher)
- Internet Explorer: Version 6.0 or later

Start Internet Explorer on your local PC. You can run the WebGuard program by entering the following information in the address field.

– "http://IP address:port number" (The DVR IP address and the WebGuard port number (default: 12088) set in the Network setup screen (Network tab))
– Or, "http://DVRNS server address/DVR name" (The DVRNS server address and the DVR name registered on the DVRNS server)
– Or, "http://www.dvronline.net" (Entering the DVR IP address or the DVR name will be required when logging in)

Select between the WEBWATCH (Web monitoring) and WEBSEARCH (Web search) modes and enter the appropriate port number of the program. Entering your ID and PASSWORD and clicking the [LOGIN] button logs in using the selected mode. Selecting Save ID saves the ID you entered.

You will need to enter the DVR IP address in the DVR ADDRESS field when running the WebGuard program by entering http://www.dvronline.net. Selecting the Use DVRNS option allows you to enter the DVR name registered on the DVRNS server instead of the IP address. You must enter the DVRNS server address and port number in the SETUP setting when selecting the Use DVRNS option.

NOTES:

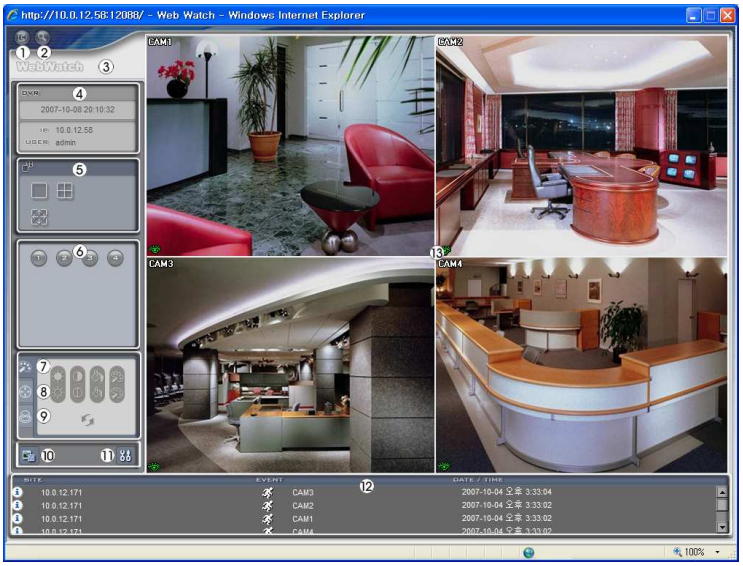
- You will need to get the appropriate IP address for the DVR you want to connect to and the WebGuard port number from your network administrator.
- WebGuard only works with Microsoft Internet Explorer and will NOT work with other browsers.
- The port numbers for *WEBWATCH* and *WEBSEARCH* should be the same port numbers used for *Remote Watch* and *Remote Search* that were set during the network setup (*Main Menu – NETWORK – LAN* tab).
- When running the updated WebGuard for the first time, Internet Explorer might occasionally load the information of the previous version. In this case, delete the temporary Internet files by selecting *Tools* → *Internet Options* → *General* tab, and then run WebGuard again.
- There might be a problem with the bottom of the WebGuard page being cropped caused by the address or status bars in Microsoft Internet Explorer 7.0. In this situation, it is recommended that websites open windows without address or status bars by changing Internet setting. (Go to the Tools → Internet Options → Security tab → Click the Custom level… button → Select Enable for the Allow websites to open windows without address or status bars option.)

NOTES:

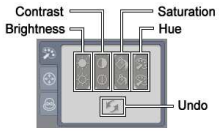
- When running WebGuard in the Microsoft Windows Vista operating system, it is recommended that you start Internet Explorer with elevated administrator permissions. Click the right mouse button on the Internet Explorer icon and select the *Run as administrator* option from the context menu. Otherwise, some functions of the WebGuard might be limited.
- There might be a problem with screen display or screen update due to low image transmission speed when using the Microsoft Windows Vista operating system. In this situation, it is recommended you disable the Auto Tuning capability of your computer. Run the Command Prompt with elevated administrator permissions (Go to the Start Menu → Accessories → *Command Prompt* → Click the right mouse button and select the *Run as administrator* option). Then enter "netsh int tcp set global autotuninglevel=disable" and press the enter key. Restart your computer to apply the changes. If you want to enable the Auto Tuning capability again, enter "netsh int tcp set global autotuninglevel=normal" after running the Command Prompt with elevated administrator permissions. Restart your computer to apply the changes.

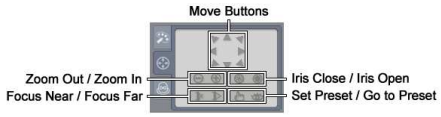
Web Monitoring Mode

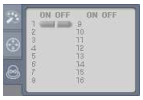
The WebWatch is a remote web monitoring program that allows you to monitor live video transmitted in real-time from the remote DVR.



① Log Out: Click to log out of the WebGuard program.
② WebSearch: Click to access to the web search mode.
③ WebWatch Logo: Position the mouse pointer on the logo to see the version of the WebGuard program.
④ DVR Information: The DVR Information window displays the login information of WebGuard.
⑤ Display Mode: Select the desired display mode. When changing the screen format, the selected camera on the current screen will be located in the first cell of the new layout.
⑥ Camera Buttons: Select the camera to be viewed.
⑦ Image Adjustment: Click to adjust the brightness, contrast, saturation and hue of monitored image.
⑧ PTZ Control: Click to control pan, tilt and zoom of the camera from a remote site.
⑨ Click to control an alarm out device at the remote site.







⑩ Save Image: Click to save the current image as a bitmap or JPEG file format.

⑪ Setup: Click to set up the image drawing mode and OSD display. You can adjust the display speed by changing the image drawing mode, and select OSD information to be displayed on the screen.

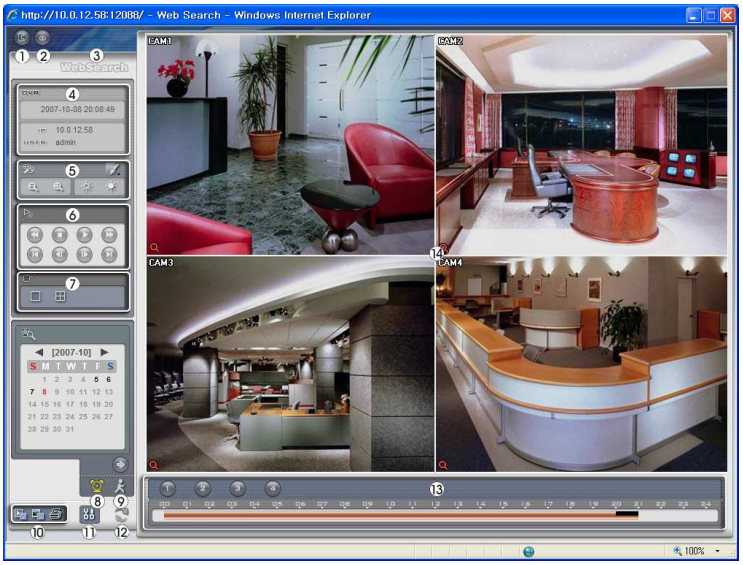
⑫ Event Status Window: The event status window at the bottom displays a list of events that were detected from the remote site.

Normal Event Alarm In On Motion Detection Video Loss

⑬ Camera Title, Aspect Ratio and Anti-Aliasing Screen: Selecting a camera on the screen and clicking the right mouse button allows you to change the camera name and the image aspect ratio displayed on each camera screen, and to enhance image display quality by eliminating staircase (aliasing) effects on the enlarged image.

Web Search Mode

The WebSearch is a remote web search program that allows you to search recorded video on the remote DVR.



① Log Out: Click to log out the WebGuard program.

② WebWatch: Click to access to the web monitoring mode.

③ WebSearch Logo: Position the mouse pointer on the logo to see the version of the WebGuard program.

④ DVR Information: The DVR Information window displays the time information of recorded data on the remote DVR and login information of WebGuard.

⑤ Zoom/Brightness Adjust/Image Processing: Click to zoom out or zoom in the recorded image. Click to adjust the brightness of the recorded images. Click to blur, sharpen, equalize and interpolate playback images.

⑥ Playback Function Buttons: The Playback Function Buttons include fast backward, pause, play, fast forward, go to the first image, go to the previous image, go to the next image, and go to the last image.

⑦ Display Mode: Click the desired display mode.

⑧ Time-lapse Search: Click to enter the time-lapse search mode which allows you to search for recorded data by time and then play back images found within the time parameters. The Timetable window located at the bottom displays the time information for the image of the date selected on the calendar. Clicking a specific time displays the image recorded at that time on the screen. Selecting allows you to display an image from a specific time.

⑨ Event Search: Click to enter the event search mode which allows you to search for event log entries using specific conditions and play back the images associated with those event entries. The event status window at the bottom displays a list of event types of playback images.

Normal Event	Emergency Event	Alarm In On	Alarm In Off
Motion Detection	Video Loss	Recorder Bad	Disk S.M.A.R.T.
Disk Bad	Disk Almost Full	Disk Temperature	

⑩ Save/Print: Click to save any video clip of recorded data as an executable file, or click to save the current image in a bitmap or JPEG file format. Click to print the current image on a printer connected to your computer.

⑪ Setup: Click to set up the image drawing mode and OSD display. You can adjust the display speed by changing the image drawing mode, and select OSD information to be displayed on the screen.

⑫ Reload: Click to reload the recording data.

⑬ Timetable: The Timetable displays recorded data of the selected camera by time (in hour segments).

⑭ Camera Title, Aspect Ratio and Anti-Aliasing Screen: Selecting a camera on the screen and clicking the right mouse button allows you to change the camera name and the image aspect ratio displayed on each camera screen, and to enhance image display quality by eliminating staircase (aliasing) effects on the enlarged image.

NOTES:

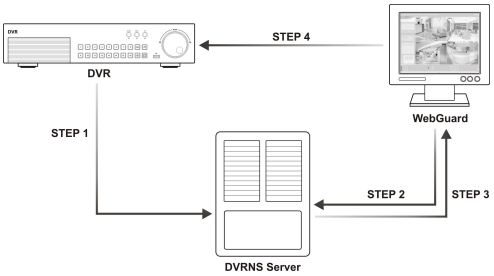
- The remote site connection in the Web Search mode will automatically be disconnected if there is no activity for 30 minutes.
- Image processing works only in the pause mode.
- A camera name change in the Web Watch and Web Search mode does not affect the camera name set up on the remote site. Leaving the Camera Title blank causes the camera name set up on the remote site to display.

DVR NAME SERVICE (DVRNS)

Overview

Using Static IP addresses in LAN/WAN networks requires high management overhead and increases the cost burden to users. Therefore, it has become essential for DVRs to support Dynamic IP addresses in ADSL/VDSL networks using DHCP (Dynamic Host Configuration Protocol). This reduces cost burdens and increases cost effectiveness for system users. Use the following steps to set up a system using DVRNS.

System Configuration



- STEP 1 (DVR → DVRNS Server): Register the unit name and IP address of the DVR during the NETWORK – DVRNS setup. This unit name and IP address will be registered on the DVRNS server directly.
- STEP 2 (WebGuard → DVRNS Server): Request the IP address of the DVR using the registered unit name of the DVR you want to connect to.
- STEP 3 (DVRNS Server → WebGuard): The DVRNS server notifies WebGuard of the requested IP address.
- STEP 4 (WebGuard → DVR): Connect to the target DVR using the IP address returned from the DVRNS server.

NOTE: You should follow steps 2 to 4 whenever connecting to the DVR because the DVR name and IP address might change at any time.

CLIP PLAYER

Disconnect the USB device from the DVR and connect it to your PC. You do not need to install any special software on your personal computer to review the video. The copied clip contains the Player program and can be viewed on computers running Microsoft Windows 2000, XP or Vista. Double click the target clip to start the Player program.

The ClipPlayer Screen displays the clip images.

- Playback and Layout Buttons:
  - : Select to go to the beginning of the video clip.
  - : Select to play the video clip in fast reverse.
  - : Select to go back one frame of the video clip.
  - : Select to change the screen layout to 2x2.
  - : Select to play the video clip in fast forward.
  - : Select to go to the end of the video clip.
  - : Select to play the video clip.
  - : Select to go forward one frame of the video clip.
- : Select to set up the Clip Player properties.
  - Print: Prints the current image.
  - Frame Info.: Displays Channel, Title, Time, Type, Size and Resolution information about the image.
  - Image Processing: Controls brightness, blur and sharpness of playback images. (Single-Screen Layout and Pause Mode Only)
  - Play Speed Control: Changes the playback speed (Play) or fast forward/backward playback speed (FF/RW).
  - Drawing Mode: Selects the draw mode level. If you are not sure about the best draw mode level for your system, try each level until the image displays properly.

- Screen Size: Changes the Clip Player screen size.
- OSD Setup…: Selects options to display on the screen.
- Enable Audio: Plays audio while playing back recorded video that has recorded audio. (Single-Screen Layout Only)
- Anti-Aliasing Screen: Enhances image display quality on the screen by smoothing stair-stepping (aliasing) effects in the enlarged image. If video plays slow because of your CPU's slow speed, releasing the Anti-Aliasing Screen option might improve playback speed.
- Show Text-In: Displays video with text-in data if the video was recorded with text-in data. (Single-Screen Layout Only)

• : Select to save clip images.

- Save as Image: Saves the current image as a bitmap or JPEG file.
- Save as Image (Actual Size): Saves the current video frame as a bitmap or JPEG file in its actual size. (Single-Screen Layout Only)
- Save as Clip-Copy: Saves video of desired time range as an executable file.
- Save as Video: Saves video of desired time range as an AVI file.
- Clip-Copy Log: Saves the clip copy log information as a text file. The user information about Save As Clip Copy will be logged as "Internal-Copy".

• : Select to enlarge the current image. You can move the enlarged image by clicking the left mouse button and dragging.

• : Select to display the image full screen

• : Indicates the clip file has not been tampered with.

• : Indicates the system has detected tampering, and playback stops.

• Slide Bar: Select to change playback position.

• Full Screen: Place the mouse cursor on an image and click it to display the image in full screen.

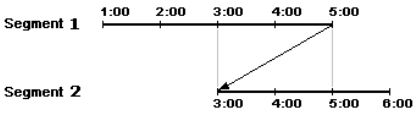
NOTES:

- It is suggested that the computer used for the Player program has at least an 800MHz Pentium III. If your CPU is slower than this, video clips recorded at maximum speed with very high image quality will be played back slowly. Also DirectX 9.0 or higher is required to install, and the VGA card with 16MB or higher video RAM is recommended for proper operation.
- Proper image display depends on the display settings of your PC. If you are experiencing display problems, click the right mouse button on the background screen and select Properties → Settings then set the *Color quality* to "*32 bit*". Then select *Advanced* → *Troubleshoot*, and then set the *Hardware Acceleration* to "*Full*". Please make sure that DirectX version 9.0 or higher has been installed if the display problem continues. To check the version of DirectX, click *Start* → *RUN* and type "dxdiag" then hit the enter key which will display DirectX Diagnostic Tool dialog box. Then move to the Display tab and make sure *DirectDraw Acceleration* is set to "*Enabled*". Test DirectDraw by selecting the *DirectDraw Test* button. Please check the driver version of the video card and update it to the latest version available. If you still have display problems after changing all display settings as described above, try replacing the video card. Video cards with an ATI chipset are recommended.
- If the VGA card or monitor does not support 800x600 video resolution, Full Screen might not be displayed properly. If this happens, press the *ESC* key on your PC keyboard to return to the normal screen mode.

TIME OVERLAP

If the DVR's time and date have been reset to a time that is earlier than the existing recorded video, it is possible for the DVR to have more than one video stream in the same time range. In this case, you can search overlapping video streams individually by selecting a specific segment.

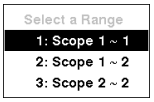
For example, when the DVR has recorded video from one to five o'clock and the user changes the time backward from five to three o'clock and then continues recording until six o'clock, there will be two video streams and segments from three to five o'clock.



You can search overlapping video streams by selecting a specific time or time range.

If you want to search recorded video at four o'clock during the overlapping time range using a search menu such as Go to the Date/Time, select the segment you want to search.

If you want to search recorded video from four to five o'clock during the overlapping time range using a search menu such as Event Log Search, it is possible for the DVR to have two overlapping start and stop times. You will be asked to select one of the overlapping start and stop times from the search time ranges as follows:



- From four o'clock of the first segment to five o'clock of the first segment
- From four o'clock of the first segment to five o'clock of the second segment
- From four o'clock of the second segment to five o'clock of the second segment

SYSTEM LOG

LOG MESSAGE	LOG MESSAGE
Boot Up	Auto Deletion
Upgrade (Local)	Search Begin (Local/Remote)
Upgrade Failure (Local)	Search End (Local/Remote)
Setup Begin	Clip-Copy Begin (Local/Remote)
Setup End	Clip-Copy End (Local/Remote)
Setup Imported	Clip-Copy Cancel (Local/Remote)
Setup Import Fail	Clip-Copy Failure (Local/Remote)
Setup Exported	Time Change (Local)
Setup Export Fail	Time Zone Change (Local)
Setup Export Cancel	DISK FULL
Schedule On	Shutdown
Schedule Off	Restart
Clear All Data (Local)	DISK# BAD
Format Disk	

ERROR CODE NOTICES

SYSTEM UPGRADE RELATED		CLIP COPY RELATED	
No.	Description	No.	Description
0	Unknown error.	0	Unknown error.
1	File version error.	1	Device error.
2	Operating system version error.	2	Mounting failed.
3	Software version error.	3	No media.
4	Kernel version error.	4	Invalid media.
100	Upgrade device mounting failed.	5	File already existed.
101	Package is not found.	6	Not enough space.
102	Extracting package failed.	7	Creating temporary file failed.
103	LILO failed.	8	Opening disk failed.
104	Rebooting failed.	9	Formatting disk failed.
105	Invalid package.	10	Database has been changed.
300	Remote connection failed.	11	Appending failed.
301	Remote network error.	12	Bad sector.
302	Remote upgrade is not authorized.	13	No executable file.
303	Saving remote package failed.	14	Opening executable file failed.
304	Remote upgrade is cancelled by the user.	15	Writing executable file failed.
400	USB device mounting failed.	16	Creating image failed.
401	Reading upgrade package on the USB device failed.	17	Burning failed.
402	Copying upgrade package on the USB device failed.	18	Burning is out of time.
500	System is busy clip copying.		

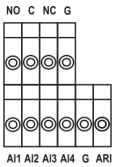
TROUBLESHOOTING

PROBLEM	POSSIBLE SOLUTION
No Power	• Check power cord connections. • Confirm that there is power at the outlet.
No Live Video	• Check camera video cable and connections. • Check monitor video cable and connections. • Confirm that the camera has power. • Check camera lens settings.
No Live Video on the VGA Monitor	If the DVR does not detect a VGA monitor automatically, press and hold the DISPLAY button on the front panel for 5 seconds or longer to switch the video output from Video out to VGA out.
DVR has stopped recording	If hard disk drive is full, you will either need to delete video or set the DVR to the Overwrite Mode.
DVR displays an error message stating that the last recorded image date and time is later than the current date and time setting of the DVR.	The DVR will automatically reset the time and date of the unit, according to the time and date of the last recorded image. If this is not the correct time and date, reset the time and date manually. If the correct time and date is earlier than the last recorded image, any video with a later time and date will be lost when resetting the correct time and date.

CONNECTOR PIN OUTS

I/O Connector

Output



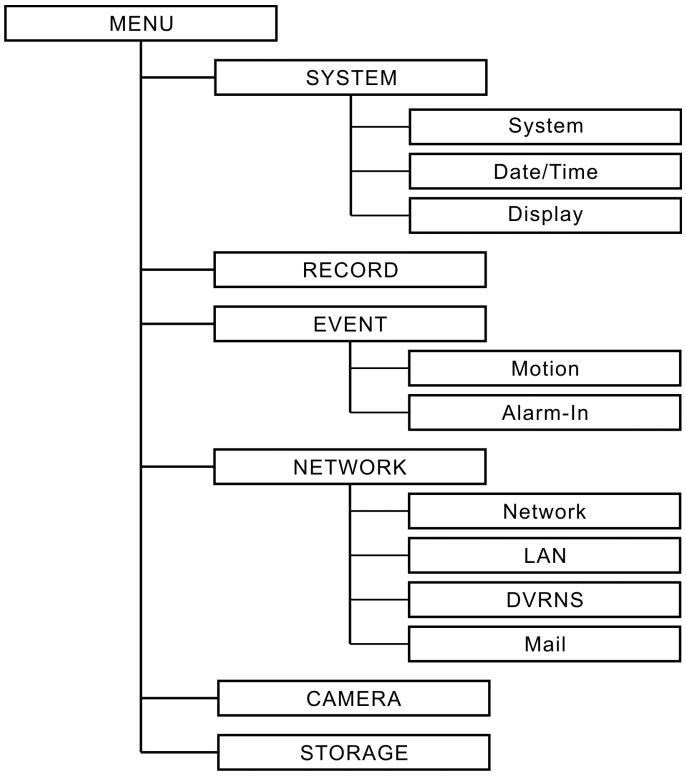
Input

AI (1 to 4)	Alarm Inputs 1 to 4
G	GND (Chassis Ground)
ARI	Alarm Reset In
NC	Alarm Out (Normally Closed)
C	Common
NO	Alarm Out (Normally Open)

RS485 Connector

Master Unit				Slave Unit
–	→	To	→	TX–
+	→	To	→	TX+
–	→	To	→	RX–
+	→	To	→	RX+

MAP OF SCREENS



SPECIFICATIONS

VIDEO	
Signal Format	NTSC or PAL (Auto detect)
Video Input	Composite: 4 inputs, 1 Vp-p, auto-terminating, 75 Ohms
Monitor Outputs	Composite: One (BNC), 1 Vp-p, 75 Ohms VGA: One (Auto detect)
Video Resolution	Composite: 720x480 (NTSC), 720x576(PAL) VGA: 720x480@60Hz (NTSC), 720x576@75Hz (PAL)
Playback/Record Speed (images per second)	120/120ips (NTSC), 100/100ips (PAL)
INPUTS/OUTPUTS	
Alarm Input	4 TTL, NC/NO programmable, Threshold: >= 2.4VDC for NC and <= 0.3VDC for NO, 0~3.3VDC
Alarm Output	1 relay output, terminal blocks, programmable as NC or NO, 2A@125VAC, 1A@30VDC
Alarm Reset In	1 TTL, terminal block
Internal Buzzer	80dB at 10cm
Network Connectivity	10/100 Base Ethernet
CONNECTORS	
Video Input	Composite: 4 BNC
Monitor Output	Composite: 1 BNC VGA: 1 DB15
Alarms	Terminal block
Ethernet Port	RJ-45
RS-485 Serial Port	Terminal block, telemetry control
USB Port	1 on front panel (2.0)
STORAGE	
Primary Storage	SATA hard disk drive
Secondary Storage	USB hard disk or flash drive
GENERAL	
Dimensions (W x H x D)	13.38" x 1.83" x 12.20" (340.0mm x 46.5mm x 310.0mm)
Shipping Dimensions (W x H x D)	18.11" x 5.63" x 16.14" (460mm x 143mm x 410mm)
Unit Weight	6.67 lbs. (3.03kg)
Shipping Weight	9.88 lbs. (4.49kg)
Operating Temperature	41°F to 104°F (5°C to 40°C)
Operating Humidity	0% to 90% NON condensing
Power	100-240 VAC, 0.8-0.4A, 60/50Hz
Power Consumption	Max. 20W
Approval	FCC, CE, CB, UL*

* CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions. This equipment is indoor use and all the communication wiring are limited to inside of the building.

Specifications are subject to change without notice.

INVENTING Comelit GROUP S.P.A. INNOVATION

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